AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [0025] with the following:

[0025] The receiver 100 has at least one antenna sample buffer 110 coupled to a set of rake receivers 120. Each rake receiver 120 is associated with a user for the given allocated spectrum and geographic area. Rake receivers 120 are identified within FIG. 1 with an index from A to K~~, for K users~~. Each rake receiver 120 is coupled to its own interference estimator 130. Although only one interference estimator 130 is shown in FIG. 1 for simplicity of presentation, multiple interference estimators 130 are included within receiver 100.

Please replace paragraph [0026] with the following:

[0026] Each rake receiver 120 includes a set of rake fingers 122, which are coupled to a rake receiver processor 125. Each rake finger 122 is associated with a particular multipath component of the received signal provided from the antenna sample buffer 110. Rake fingers 122 are identified within FIG. 1 with an index from A to J~~, for J multiple paths~~. Note that although each rake receiver 120 is generally described herein as having the same number of rake fingers 122, the specific number of rake fingers 122 need not be the same for all of the rake receivers 120. A rake receiver processor 125 includes a regeneration-factor processor 126 and a user-contribution received-signal regenerator 127, both of which are coupled to a modified-signal generator 128. Rake receiver processor 125 provides an output signal 124 for the rake receiver 120 (once all iteration(s) of interference cancellation processes are complete) and another output signal 129 that couples the rake receiver 120 to the associated interference estimator 130.

Please replace paragraph [0027] with the following:

[0027] Signals received for an antenna (not shown in FIG. 1) are buffered at the antenna sample buffer(s) 110. The buffered antenna sample signal is provided to the rake fingers 122A

through J for each rake receiver 120A through K. Each rake receiver 120 is associated with a user within the system. Focusing the discussion to a particular rake receiver 120, rake fingers 122A through J each track a different multipath component of the received signal, the initial location of which is determined through the searching process. The number~~J~~ of rake fingers can be, for example, four or six. The approach for interference cancellation described herein is not dependent on the specific number of rake fingers 122 within a rake receiver 120.

Please replace paragraph [0029] with the following:

[0029] Also, the signals produced by the rake fingers 122 are provided to the 25 regeneration-factor processor 126, which determines a regeneration factor for the particular user with which that particular rake receiver 120 is associated. In other words, for a particular user, the rake receiver 120 associated with that user has a regeneration-factor processor 126 that determines a regeneration factor for that user based on the received signal. Note that each rake receiver 120 (uniquely associated with a specific user) has its own regeneration-factor processor 126 that individually determines a regeneration factor specific to its associated user based on the received~~r~~ signal.

Please replace paragraph [0034] with the following:

[0034] Antenna sample buffer 210 includes in-phase (I) antenna sample buffer 16 and quadrature (Q) antenna sample buffer 17. Buffers 16 and 17 can be, for example, oversampled by eight times the pseudo-noise (PN) chipping rate of 1.2288 Mbsps, for each Walsh symbol. Each buffer, for example, can hold samples from two or more Walsh symbols and old samples can be overwritten with new samples.

Please replace paragraph [0035] with the following:

[0035] Rake receivers 220A through K each include rake fingers 222A through J and receiver processor 225. Rake fingers 220A~~1~~ through J include adders 14 and 15, decimators 12 and 13, noncoherent Hadamard sequence generator 8, PN & user sequence buffer 10 and delay buffer 20. The adders 14 and 15 are coupled to I antenna sample buffer 16 and Q antenna sample buffer 17, respectively and coupled to interference estimator 230. The adders 14 and 15 are coupled to decimators 12 and 13, respectively, which are coupled to noncoherent Hadamard sequence generator 8. Noncoherent Hadamard sequence generator 8 is coupled to PN & user sequence buffer 10 and delay 20 buffer 20.

Please replace paragraph [0044] with the following:

[0044] The decision variables Z_1, Z_2,..., Z_{64} are passed through a tentative decision device 30, which takes the correlation values and produces a soft-estimate of the coded data for the user associated with that rake receiver. The tentative decision device 30 can 30 employ, for example, a suboptimum, reduced-complexity version of the MAP algorithm known as the dual maxima metric generator, described in U.S. Patent No. 5,442,627 issued to Viterbi, which is incorporated herein by reference. The tentative decision device 30 provides outputs to Walsh encode, spread and scramble device 34 and to regeneration-factor generator 226. First, a tentative decision device 30 makes a hard decision on the soft information and provides the resulting data to Walsh, encode, spread and scramble device 34, which then Walsh encodes the data, spreads it using the long code assigned to the particular user, and then scrambles it using the short I and Q codes assigned to the receiver 200~~communication system 100~~. Tentative decision device 30 also provides the soft-estimate of the data to the regeneration-factor generator 226. Regeneration-factor generator 226 averages the soft-estimate of the data (e.g., the six soft-estimates corresponding to the six coded bits comprising a Walsh symbol) and the average value is used to form the soft-decision regeneration factor, β_k.

Please replace paragraph [0051] with the following:

[0051] The cutoff frequency of the lowpass filter is determined by the constant μ. This constant is chosen based on the expected Doppler frequency of a particular user. The constant μ can be, for example, a value of 0.7 which is assumed in the performance studies described below in connect with FIG. 6. The output of the lowpass filter is then sent to processor 380. Processor 380 receives the lowpass filter outputs and receives the data decisions from Walsh encode, spread and scramble device 34, to estimate of the multipath delays. Processor 380 then uses these multipath delays to form an estimate of the I and Q component of the transmitted signal. ~~This estimate is then sent to regeneration-signal generator 226.~~

Please replace paragraph [0057] with the following:

[0057] Antenna sample buffer 310 includes in-phase (I) antenna sample buffer 16 and quadrature (Q) ntenna sample buffer 17. Buffers 16 and 17 can be, for example, oversampled by eight times the pseudo-noise (PN) chipping rate of 1.2288 Mb~~s~~ps, for each Walsh symbol. Each buffer, for example, can hold samples from one or more symbols.

Please replace paragraph [0060] with the following:

[0060] MRC 28 is coupled to delay buffers 4~~1~~14 from the rake fingers 322A through J. Decision processor 26 is coupled to MRC 28 and hard decision 29, and provides an output for rake receiver~~processor~~ 320. Hard decision converter 29 is coupled to channelize and scramble device 30, which is in turn coupled to channel estimator 32, which is in turn coupled to modified-signal generator 328.

Please replace paragraph [0064] with the following:

[0064] Modified estimates of the interference caused by other users are subtracted by adders 14 and 15~~6~~ from the I and Q antenna samples, respectively, and the result is passed to decimators 400 and 402. Note that in the first iteration of interference cancellation, the modified estimates are all zero. Ordinarily, the decimator (400 and 402) provides the derotator 404 with every L^{th} antenna sample (corresponding to a single PN chip and assuming L times oversampling). The early/late tracker (not shown), however, may instruct the decimator to advance or retard by one antenna sample. For example, assuming L=8, the spacing between antenna samples may progress as "88888887888888888988888..." where an advance command was received in the 8^{th} PN chip interval and a retard was received in the 18^{th} PN chip interval.

Please replace paragraph [0068] with the following:

[0068] Up to three quadrature channels are multiplied by the channelization code, Cd, from channelization code buffer 24 using multipliers 408D, 408E and 408F. The outputs from multipliers 408D, 408E and 406F are then sent to one of the inputs of "and" gates 410D, 410E and 410F, respectively. The other "and" gate input is sent from a lock detector (not shown), which determines whether the signal is too weak for inclusion in subsequent processing. The outputs from and gates 410D, 410E and 410F are then sent to adders 412D, 412E and 412F, respectively. These adders 412D, 412E and 412F sum the outputs from 410D, 410E and 410F, respectively over SF values where SF is the spreading factor used for a particular channel. The outputs from adders 412D, 412E and 412F are then sent to delay buffer 4~~4~~14, which delays the signal to align it with the signals from other rake fingers.

Please replace paragraph [0076] with the following:

[0076] In an alternative embodiment, a regenerative IC receiver compatible with the IS-2000 standard can be implemented in a manner similar to that described for the receiver compatible with the W-CDMA standard where the soft-decision regeneration factor is generated by processing the soft-output of the maximal ratio combiner (MRC). FIG. 11 illustrates a system block diagram of a receiver compatible with the IS-2000 standard, according to an embodiment of the present invention. The system block diagram shown in FIG. 11 essentially corresponds to the system block diagram shown in FIG. 7, with the exception of certain components. More specifically, the receiver compatible with the IS- 2000 standard includes long and short code buffer 22' and Walsh code buffer 24'. In addition, the receiver compatible with the IS-2000 standard includes a block deinterleaver 462', soft-output decoder 29' and signal regenerator 30' within the received-signal regenerator 427'. Soft-output decoder 29' can be, for example, a convolutional decoder or turbo decoder. The soft-decision regeneration factor is formed using the soft-output from the soft-output decoder 29'. The decoder can be selected, for example, to match the encoder (not shown in FIG. 11) used on a particular channel. The decoder soft-output from soft-output 29' can be, for example, in the form of the log-likelihood ratio (LLR) for a given symbol.